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berry until last year, when a few were produced; and the short-styled *Bouvardia*, so common in greenhouses, and with short styles, had produced a branch on one plant under his observation the past winter, which had the styles projecting beyond the corolla. In annual plants the variation in sexual characters was well known to vary, even with external conditions. *Ambrosia artemisiæfolia*, the common rag-weed, produces mostly male flowers in poor soil, or when growing thickly together in wheat fields after the grain is cut; but when growing in the richer soil of potato or Indian-corn fields, the increase of female flowers is very marked. Sometimes plants under these conditions are found wholly female. Indian-corn also varies through some innate law. Male flowers are not uncommon on the spikes which bear the grain, while grain among the males, or "tassels," showed the occasional presence of female flowers there. It is more than likely that complete diœcism, claimed for some Asiatic coniferæ, does not really exist.

Prof. Angelo Heilprin remarked that fruit had been found on this tree recently in the Central Park, New York; and that bees might carry the pollen long distances, and fertilize female flowers. It did not follow that the presence of fruit on isolated trees involved monœcism.

Mr. Redfield observed that pollen from the large male tree, three-quarters of a century old, at the old Hamilton homestead, now Woodlands Cemetery, and but six miles away in a direct line, might be wafted by winds to Mr. Wister's tree in Germantown.

The President, Dr. Joseph Leidy, remarked that pollen from coniferous trees was known to be carried by winds to enormous distances.

Remarks on some Rock Specimens.—Prof. Leidy remarked in relation to the rock specimens presented by him this evening, that most of them he had collected last summer on South Mountain, ten miles from Wernersville, Berks Co., Pa. The ridge consists of azoic rocks, mainly compact gneiss, often obscurely stratified and regular or not folded or contorted. With this is associated granite with little or no mica, and black syenite mostly composed of hornblende with feldspar and quartz in fine grains. The rocks in two localities of the vicinity are traversed by dykes of basaltic trap. Potsdam sandstone flanks the mountain on the eastern side, and this at the base is overlaid by the lower Silurian limestone of the Lebanon Valley. The specimens collected from exposures of the Potsdam sandstone consist of quartzite, remarkable for their sharply defined character, resembling in a manner cleavage fragments of orthoclase. The form is due to jointing, which is rhomboidal, usually in two directions crossing the planes of stratification, but also frequently parallel with the latter. Occasionally the jointing resents other planes; thus one of the specimens, the size of an ordinary brick exhibits planes due to jointing in five different directions.

Incidentally to the foregoing, Prof. Leidy said that it would be an interesting subject of investigation to trace the source of the materials of the gravel on which our city is built. Everywhere of a red color due to the peroxidizing of the iron of the rocks from which the gravel has been derived, the basis of this latter is mainly siliceous. Many of the siliceous pebbles, from a small size to boulders approximating a ton in weight, appear to have been derived from the Potsdam sandstone, north of the city. They commonly have the same quartzite constitution; and in their irregularly rectangular and rhomboidal form, with borders and angles rounded by attrition, they exhibit the jointed condition of the Potsdam rocks. In earlier days when he learned that quartz belonged to the rhomboidal system, but exhibited no disposition to cleavage, he thought that the rhomboidal quartz pebbles of our gravel were examples showing a tendency to crystalline cleavage. Some of the quartzite pebbles, like portions of the Potsdam rocks, are of so compact a character, and banded in structure, that when polished they look like chalcedony, as exemplified by a specimen picked up on the Delaware shore.

Other pebbles of milky, smoky, and other quartz appear to have been derived from quartz veins of our neighboring gneiss rocks.

Black pebbles found in the gravel used in the construction of the bed of the junction railroad just north of the city, and collected as specimens of basanite or touchstone, appear to be hornstone or chert, like that in the lower Silurian limestone at Easton. Numerous pebbles of the same kind are found on the Delaware shore at the latter place. Limestone itself appears to form no conspicuous element of our gravels. Though abundant in the same sources of supply of the common ingredients of the gravels, its fragments have been completely dissolved away. Occasionally he had seen in the interior of a freshly broken pebble of black hornstone, such as one presented this evening, minute rhombohedrons of calcite, while on the exterior minute cavities of the same form show where similar crystals have been dissolved.

Pebbles of red sandstones and shales are frequent elements of our gravel, and have evidently been derived from the triassic rocks, so abundantly exhibited north of the city. Pebbles of compact quartz conglomerate are less frequent, and may probably have been derived from the same source, or perhaps from the coal measures farther north.

Irregular pebbles of various sizes, of a variety of granite, consisting of quartz with conspicuously large crystals of muscovite mica, occur in some localities, as in West Philadelphia, but a similar rock in place is unknown to him. The exposed sides of the mica crystals, worn into hollows of the quartz, appear so compact, that one would hardly suspect their character without seeing the cleavage surfaces.

Fossils of any kind are extremely rare in the gravel of our immediate vicinity, and in the course of a lifetime he had picked up less than half a dozen quartzose pebbles pseudomorphic of a coral like *Favosites*, and with some obscure brachiopod impressions.

In the locality, from which the jointed specimens of quartzite of the Potsdam sandstone presented this evening were collected, he looked in vain for *Scolithus linearis*, viewed as a characteristic fossil of this formation. Some miles further off, near Sheridan Station, where an exposure of the same rock was less metamorphosed, and in part consisted of friable sand, he picked up a single specimen which contained the fossil.

JANUARY 10, 1882.

The President, Dr. LEIDY, in the chair.

Twenty-six persons present.

Three more Fresh-water Sponges.—Mr. EDW. POTTS had described in the Proceedings under date of July 26, 1881, a new species of *Carterella*, *C. latitenta;* his later identified findings during that year are here mentioned.

MEYENIA CRATERIFORMA. This sponge, first found during September, 1881, in the Brandywine, near Chadd's Ford. is of very delicate structure. Its framework of skeleton spicules is exceedingly meagre and slightly bound together, scarcely amounting to a system of meshes and polyhedral interspaces as in most other sponges; and as a consequence we find the numerous small white statospheres lying in recesses far larger than themselves, freely exposed to view from the upper or outer side of the sponge. This trait is only seen in the thinnest of encrusting sponges.

The skeleton spicules may be described as acerate, gradually sharp-pointed, sparsely and very minutely microspined. With these were mingled smaller and more slender forms, which may be an earlier stage of the same, or perhaps are dermal spicules; but beside these may be seen upon the undisturbed surface of the sponge two other forms—one, cylindrical, slender, with truncate ends—the other similar in all respects to the long birotulates which surround the statospheres. The last have most probably been misplaced from their normal position.

The birotulate spicules surrounding the statospheres, as compared with those of any other described sponges, and with the diameter of their own rotules, are relatively very long. The diameter of the completed statosphere is to that of the contained chitinous body, about as 10 to 7, and the diameter of the rotules, while per-